New Jersey Department of Environmental Protection
New Jersey Administrative Code
Title 7, Chapter 1E

Subchapter 2

Prevention and Control of Discharges at Major Facilities

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7:1E-2.1 Scope

This subchapter prescribes the rules of the Department applicable to the owners or operators of major facilities storing, transferring, processing or using hazardous substances. The following shall govern the standards for equipment and procedures utilized at major facilities.

7:1E-2.2 Storage

(a) Aboveground storage tanks shall meet the following standards:

1. Aboveground storage tank installations shall be provided with an adequate means of secondary containment or diversion system, designed and built pursuant to N.J.A.C. 7:1E-2.6.

2. The base underlying the storage tank shall be made of or surfaced with a material impermeable to passage or chemical attack by the stored substance under the conditions of storage prevailing within the tank. Existing storage tanks shall be exempt from this requirement until such time as

they may require substantial reconstruction or replacement, unless the Department orders a storage tank removed from service because of the likelihood of a discharge. Before such a tank is returned to service, it must meet this requirement.

3. Pipes leading to and from aboveground storage tanks which enter the tank below the liquid level shall be equipped with valves that can be remotely activated or are readily accessible in the event of a leak or discharge, and which are sufficiently close to the tank that they can prevent the contents of the tank from escaping outside the secondary containment area in the event of a pipe rupture outside the containment area. Such pipes shall not penetrate or pass through any walls, dikes or berms used as secondary containment, unless the impermeability or integrity of the secondary containment is not impaired.

4. Aboveground storage tanks installed prior to July 22, 1990 with a capacity greater than 2,000 gallons and all appurtenant piping to the first valve shall be subject to initial integrity testing or static head product testing on a schedule which takes into account the age of the tank, proximity to surface water supplies, the leak record of the tank for the preceding five years, and the date of the tank's last integrity test, as delineated in Table 1, and according to the schedule in Table 2. Thereafter, each aboveground storage tank with a capacity greater than 2,000 gallons and its appurtenant piping to the first valve shall undergo a combination of integrity testing, as defined in N.J.A.C. 7:1E-1.6, and internal visual inspection, as defined in N.J.A.C. 7:1E-1.6, at intervals based on the construction material of the tank, substances stored, soil conditions, corrosion allowance remaining, corrosion rate, leak history of the tank, degree of risk and the results of visual inspections, as described in the DPCC plan pursuant to N.J.A.C. 7:1E-4.2(d). In no case shall the period of time between the combination of integrity tests and internal inspections exceed five years, unless the tank has an inspection and maintenance program that is in compliance with API 653, incorporated herein by reference. Integrity testing should be performed in compliance with accepted industry standards, which include, but are not limited to, API 510, API 574, API 653, ASME Section V, ASME Section VIII, ASME Section X, and ASTM E1067, incorporated herein be reference.

Table 1
Testing Schedule Factors

Factor	Points
age of tank (years)	
> 50	10
26 - 50	6
10 - 25	3
< 10	1
proximity to surface water supplies (feet)	
< 500	5
> 500	1

number of leaks in past five years

≥ 2	25
1	5
0	1

years since last structural integrity test

≥ 5	15
> 1 but < 5	5
1	1

Table 2
Initial Testing Schedule

Total points from Table 1	Deadline for testing
> 30	February 1, 1992
21 - 30	August 1, 1992
11 - 20	February 1, 1993
< 10	August 1, 1993

5. A report on the initial integrity testing or static head product testing required by (a)4 above shall be submitted to the Department within 30 days of the completion of the test. This report shall include identification of the facility and the equipment tested, the age of the equipment, the test method(s) used, date of the test(s), name and affiliation of the person performing the test, the summary test results, any repairs performed or scheduled to be performed after the tests, and the expected service life of the equipment. The report shall be certified pursuant to N.J.A.C. 7:1E-4.11, and shall be sent to:

Bureau of Discharge Prevention
New Jersey Department of Environmental Protection
P.O. Box 424
Trenton, New Jersey 08625-0424

6. Aboveground storage tanks installed or placed into service on or after July 22, 1990 with a storage capacity greater than 2,000 gallons and all appurtenant piping to the first valve shall be subject to integrity testing, as defined in N.J.A.C. 7:1E-1.6, prior to being placed into service. For shop fabricated tanks, testing done by the manufacturer at the site of manufacture is acceptable. Subsequent testing shall be performed in accordance with (a)4 above.

7. If a tank has been tested or inspected as required by (a)4 or 6 above and fails to

meet the applicable standards as to structural integrity or where a condition has been determined to exist for which there is no standard as set forth in (a)4 or 6 above, but which, in the opinion of the person performing the tests or inspection as set forth in the report, constitutes a condition which will threaten structural integrity, the tank shall be emptied and remain empty until it is repaired or replaced. Conditions threatening structural integrity may include, but are not limited to, wall thinning, leaks, or extensive corrosion, pitting, or cracking.

(b) Underground storage tanks shall meet the requirements of N.J.A.C. 7:14B.

(c) If a storage tank is served by internal heating coils, such coils, the pipes leading to and from them, and the appurtenances to which they connect, must be designed so that any leakage passing from the tank into the heating coil system will be captured and contained in a secondary containment or wastewater treatment system.

(d) Every aboveground storage tank, except as provided in (e) below, shall have a high liquid level audible or visual alarm designed to alert plant personnel of overfills, and one of the following:

1. A high high liquid level pump cutoff device designed to stop flow at a predetermined level;

2. Direct communication between tank gauger and pumping station, such as direct line of sight, or telephone or radio communication; or

3. Fast response systems for determining liquid levels, which result in rapid shutdown of pumping.

(e) Owners or operators of aboveground storage tanks of 2,000 gallons or less may meet the requirement of (d) above by having such tanks attended at all times during the filling procedure.

(f) Storage tank overfill lines, or vent lines on storage tanks without overfill lines, where they exist, shall be protected by secondary containment, or directed into other tanks, or other appropriate holding areas.

(g) Mobile or portable storage tanks shall be positioned or located so as to be protected by secondary containment or diversion structures designed and built pursuant to N.J.A.C. 7:1E-2.6. Such storage tanks shall not be located in areas subject to periodic flooding or washout, unless adequately protected so as to prevent hazardous substances stored therein from being carried off or discharged at times of flooding or washout.

(h) Drum and other storage areas shall be equipped with adequate secondary containment or diversion systems designed and built pursuant to N.J.A.C. 7:1E-2.6.

7:1E-2.3 Tank car or tank truck loading or unloading areas

(a) All tank car or tank truck loading or unloading areas employed in the loading or unloading

of hazardous substances shall be paved or surfaced with impermeable materials, and equipped with an adequate means of secondary containment or diversion, designed and built pursuant to N.J.A.C. 7:1E-2.6.

(b) Prior to the filling of any tank car or tank truck, the lowermost drain and all outlets of such vehicle shall be examined in accordance with the applicable SOP to insure they are closed.

(c) During filling and prior to departure of any tank car or tank truck, the lowermost drain and all outlets of such vehicles shall be closely examined for leakage, in accordance with the appropriate SOP, and if necessary, tightened, adjusted, repaired or replaced so as to prevent liquid leakage in transit. All manifolds on tank cars or tank trucks shall be flanged or capped, and valves secured, prior to leaving loading or unloading areas.

(d) A system to prevent tank car or tank truck departure before complete disconnect of loading or unloading lines, such as a physical barrier (that is, wheel chocks) or brake interlock system, shall be utilized in loading or unloading areas.

(e) Tank cars in the process of being loaded or unloaded shall be attended at reasonable intervals during the procedure, and shall be attended during topping off, in accordance with the appropriate SOP. Tank trucks in the process of being loaded or unloaded shall be attended at all times during the procedure, in accordance with the appropriate SOP.

7:1E-2.4 In-facility pipes for hazardous substances

(a) Where practicable, each in-facility pipe at a major facility containing a hazardous substance shall be marked by lettering, color banding or color coding to indicate the substance transferred through it.

(b) New buried piping installations shall have a product-sensitive leak detection device, where such devices are state-of-the-art, and shall be double walled or have adequate secondary containment or diversion systems designed and built pursuant to N.J.A.C. 7:1E-2.6.

(c) Existing buried pipes shall be equipped with product-sensitive leak detection devices, where such devices are state-of-the-art technology. Where state-of-the-art technology does not exist, the owner or operator shall institute a maintenance and repair program for buried pipes following API 570, incorporated herein by reference, or some other industry standard acceptable to the Department.

(d) If a section of buried pipe is exposed for any reason, the owner or operator shall ensure that it is carefully examined for deterioration, and if found to be deteriorated, shall be repaired or replaced. Existing pipes which require substantial reconstruction or replacement shall be upgraded to the standards applicable to new buried piping.

(e) Pipes removed from service shall be capped or blank-flanged and marked as to origin, or physically removed.

(f) Pipe supports should be designed so as to minimize abrasion and corrosion and allow for expansion and contraction.

(g) If in-facility pipes are elevated across roadways, gate check-in procedures, warning signs or other means shall be used to minimize the chance of a vehicular collision with the pipes.

7:1E-2.5 Process areas at major facilities for hazardous substances

(a) Drainage from production facilities, including buildings, and other process areas shall be designed and built so as to provide a means of secondary containment or diversion for leaked hazardous substances pursuant to N.J.A.C. 7:1E-2.6.

(b) Process wastewater and cooling water pipes, plant drains and similar installations which drain into sewers, storm drains, public wastewater treatment plants, watercourses or other routes which drain to the waters of the State shall be engineered so that leaks of hazardous substances will not escape through them to waters of the State. If hazardous substances captured in secondary containment systems will drain into process wastewater lines, provision must be made to ensure compliance with the applicable NPDES or NJPDES permit before the water is discharged.

7:1E-2.6 Facility drainage and secondary containment

(a) All portions or areas of a major facility in which hazardous substances are routinely refined, produced, stored, held, handled, processed, or transferred shall be designed so that any leak will be prevented from becoming a discharge.

(b) Impermeable secondary containment or diversion structures to prevent leaked hazardous substances from becoming discharges include:

1. Dikes, berms or retaining walls;

2. Curbing;

3. Gutters, culverts and drainage systems;

4. Diversion ponds, lagoons, retention basins, holding tanks, sumps, slop tanks and other collecting systems;

5. Drip pans; or

6. Other equivalent means approved by the Department.

(c) Secondary containment or diversion systems, structures or equipment shall meet the following standards:

1. The second containment or diversion system must block all probable routes by which leaked hazardous substances could reasonably be expected to become discharges;

2. The capacity of the secondary containment or diversion system shall include an

additional capacity to accommodate six inches of rainwater, if the secondary containment or diversion structure is located such that rainwater could accumulate in it, and shall be:

i. For storage areas, the volume of the largest tank or drum utilizing the system;

ii. For tank car or tank truck loading/unloading areas, the volume of the largest compartment in any tank car or tank truck utilizing the area;

iii. For buried pipes, the maximum volumetric flow rate multiplied by the maximum amount of time between the detection of a leak and the shutdown of the pipe; or

iv. For process areas, the volume of the largest piece of equipment in the area, or the volumetric flow rate through the area multiplied by the maximum amount of time between the detection of a leak and the shutdown of the system, whichever is greater;

3. All components of the secondary containment or diversion system shall be made of or lined with impermeable materials, which must be maintained in an impermeable condition. Existing systems for existing aboveground storage tanks are exempt from this requirement if the existing system:

i. Can protect ground water for the period of time needed to clean up and remove a leak, up to the entire volume of the largest tank utilizing the system;

ii. Allows the visual detection of leaks; and

iii. Is inspected daily;

4. No process area, loading or unloading area, diked storage area or other storage area, or secondary containment or diversion system appurtenant thereto shall drain into a watercourse, or into a ditch, sewer, pipe or storm drain that leads directly or indirectly into a watercourse or public sewage treatment plant, unless provision is made to:

i. Retain, by valves or other positive means, any accumulated precipitation until it can be ascertained to the satisfaction of the Department that no hazardous substances will be discharge to the environment; or

ii. Intercept any leaked hazardous substances in a permitted industrial wastewater treatment or pretreatment facility or other facility operated in accordance with a valid and effective NJPDES or NPDES permit;

5. Catchment basins, lagoons, and so forth, shall not be located in a manner that would subject them to flooding;

6. Incompatible materials shall not be stored within the same containment area if there is a substantial likelihood of them mixing in the event of leakage. This restriction does not apply to

process areas where the substances are brought into proximity as part of a production process; and

7. Provision shall be made for promptly removing leaked hazardous substances from a secondary containment or diversion system. Secondary containment systems shall not be used as backup storage systems nor for any other purpose that would impair their capacity to contain leaks.

(d) A major facility handling nonmiscible lighter-than-water hazardous substances, which is adjacent to, or sufficiently near a body of surface water such that a leak from the facility would be reasonably expected to become a discharge, shall maintain on site flotation boom and/or filter fences and/or sorbent materials sufficient to contain and prevent the further spread of discharges.

7:1E-2.7 Marine transfer facilities

(a) All rules and regulations of the U.S. Coast Guard which apply to oil transfer facilities, in particular 33 CFR 154 and 156, are herein expressly adopted by reference, and are further made applicable as well to all marine transfer facilities which transfer in the liquid state any hazardous substances other than oil.

(b) If oil or other non-miscible lighter-than-water hazardous substances are transferred at the facility, there shall be kept available a length of flotation boom or other containment device sufficient to totally enclose a vessel while engaged in the transfer of hazardous substances from a vessel to the facility or from the facility to a vessel.

(c) When transferring hazardous substances between vessels, the containment device shall be capable of encircling both vessels.

(d) A containment device shall be deployed prior to commencing the transfer of any non-miscible lighter-than-water hazardous substance with a flash point in excess of 100 degrees Fahrenheit (38 degrees centigrade) as measured by the Penske-Martens closed cup flash test (ASTM D-93, incorporated herein by reference), when current and wind conditions permit the effective use of such devices and the device can be safely deployed without endangering any personnel, any vessel, or obstructing any shipping channel. This provision does not apply to the transfer of any hazardous substance to be used as a fuel or a lubricant by the vessel.

(e) When conditions prohibit the immediate deployment of a containment device, such containment device shall be maintained on a standby basis during the transfer for rapid deployment in the event of a discharge.

(f) When transferring or receiving hazardous substances where the vessel, is docked parallel to the dock, the containment device is to originate at some point before the bow and terminate at some point behind the stern of the vessel so that the dock itself constitutes one side of the contained area, if the dock is capable of acting as an effective barrier.

(g) In the case of an "open pier" or a "finger dock" where the vessel is docked perpendicular to the dock, the boom is to encircle the entire vessel except for the area of the dock the vessel sits

adjacent to, if the dock is capable of acting as an effective barrier.

(h) If a containment device is required by the Department to be in place during a transfer of a hazardous substance, the device shall be deployed not less than 15 feet from the vessel prior to commencement of the transfer operation, except in the case where a dock may act as part of the containment, and shall be maintained in a manner that minimizes the potential for any discharged hazardous substance from leaving the contained area.

(i) Transfer operations shall not commence, or if commenced shall be discontinued immediately, upon detection of any of the following:

1. National Weather Service forecasts predict for the vicinity of the facility gale force winds, heavy rain, sleet, snow or other storm conditions, and the person in charge determines that a transfer cannot be accomplished without increased risk of discharge, or if such weather conditions occur after transfer operations have been commenced;

2. Fire occurs in the vicinity of the transfer operation or a nearby portion of the transfer facility unless such a transfer is necessary to prevent further endangerment of personnel, the vessel or facility;

3. At any time the transfer system is functioning contrary to the standard operating procedures of the facility;

4. A break occurs in the transfer system;

5. There is an apparent discrepancy between the quantity of hazardous substance transferred and received;

6. The communication system is not operative;

7. Hazardous substances are observed in the water near any transfer component, unless it can be ascertained that the hazardous substances are not being discharged from the vessel or the marine transfer facility involved in the transfer operation; or

8. A discharge occurs during transfer. Transfer shall not be resumed until after the discharge has been reported to the Department, and the Department or Federal on-scene coordinator under the National Contingency Plan pursuant to 40 CFR 1510 is satisfied that adequate steps have been taken to contain the discharge and to prevent further discharges. Under certain circumstances, it may be necessary to continue transfer operations even though a discharge has occurred, for example, in order to off-load the contents of a vessel which is leaking.

(j) When a containment device is deployed, prior to its removal, all discharged hazardous substances contained by the device shall be properly cleaned up and removed.

(k) Any containment device deployed shall be retrieved and properly cleaned or disposed of

by the owner or operator upon completion of the transfer, or at such time as it is no longer needed to prevent the spread of or to divert a discharge.

7:1E-2.8 Illumination

(a) Major facilities which transfer hazardous substances to or from vessels between the hours of sunset and sunrise shall perform all such transfers using fixed lighting that shall adequately illuminate:

1. Each transfer connection point in use at the facility;

2. Each transfer connection point in use on the vessel;

3. Each hazardous substances transfer work area at the facility; and

4. Each hazardous substances transfer work area on the vessel.

(b) Major facilities which transfer hazardous substances to or from vessels between the hours of sunset and sunrise shall perform all such transfers using fixed or portable lighting that shall adequately illuminate surface area of the water surrounding the vessel sufficient to determine that no discharge is occurring.

(c) Adequate lighting shall mean any lighting which complies with U.S. Coast Guard rules or regulations applicable to oil transfers facilities, particularly 33 CFR 154.570.

7:1E-2.9 Flood hazard areas

Hazardous substances stored within the 100-year flood hazard area of any watercourse as delineated by the Department in N.J.A.C. 7:13-7.1 or stored within an area known by the owner or operator of the major facility to be subject to a high probability of flooding shall be adequately protected so as to prevent such hazardous substances from being carried off by or being discharged into flood waters.

7:1E-2.10 Visual inspections and monitoring

(a) All equipment and portions of the major facility in service using hazardous substances shall be visually inspected in accordance with standard operating procedures pursuant to N.J.A.C. 7:1E-2.14. Visual inspections shall be performed at a minimum according to the following schedule:

1. Prior to each marine transfer for adequacy, deterioration, leaks or discharges, all transfer area lighting and all aboveground transfer valves, pumps, flanges, flexible hoselines and connections, unless they are not readily accessible, that are to be used in the transfer;

2. Once daily for integrity and leaks, all secondary containment systems and diversion systems for aboveground storage tanks which are not impermeable;

3. Once daily or prior to each use, whichever is less frequent, for integrity, deterioration and leaks, loading or unloading areas, including flexible hoselines;

4. Once weekly for integrity and leaks, process areas;

5. Once monthly for integrity and leaks, all other storage areas and secondary containment or diversion systems, and all aboveground pipes; and

6. Once quarterly for integrity and leaks, all other aboveground valves, pumps, flanges, connections and equipment, and all security fences and locks.

(b) Records shall be kept for all visual inspections. These records shall document that inspections were performed, any problems found, and the subsequent correction of such problems.

(c) Unless a leak or discharge is likely to be detected by personnel, product gauging, an automatic leak detection system, or other means acceptable to the Department, the owner or operator of a major facility shall implement a ground water monitoring program approved by the Department and satisfying the requirements of N.J.A.C. 7:14A-6.

7:1E-2.11 Housekeeping and maintenance

(a) Hazardous substances shall be kept in containers suitable for their storage or processing at all times except when being transferred between containers. Containers shall be compatible with the substances stored therein and resistant to chemical attack by the substances. Hazardous substances shall be kept protected from the elements and the possibility of leakage.

(b) Tanks, pipes, values, glands, drums or other equipment leaking hazardous substances shall be promptly repaired, replaced or taken out of use following detection of a leak, unless provision is made to capture and contain leaking hazardous substances in a drip pan or other appropriate containment device. If such provision is made, the leaking item shall be repaired, replaced or taken out of use within 15 days after the leak is detected unless the shutdown of a process unit is necessary. A leak shall be repaired at the earliest period in which either the process is not in operation or the particular unit is out of service, whichever occurs first.

(c) Cleanup of all leaks or discharges of hazardous substances shall begin promptly upon detection. Loose quantities of hazardous substances shall not be allowed to persist on grounds, floors, walls or equipment, or any other places within the facility.

(d) The facility shall keep on hand, in convenient locations, adequate quantities of sorbent materials, chemical neutralizing agents or other materials as needed, sufficient to contain and clean up such small leaks or discharges as may be expected to occur in the ordinary operations of the facility.

(e) The facility shall maintain an adequate supply of protective safety equipment, such as chemically resistant coveralls, boots, or gas masks, in convenient locations for use by any personnel who are required to clean up leaked or discharged hazardous substances. Where protective safety equipment

is required by any regulation of the Federal Occupational Safety and Health Administration, compliance with such regulation shall be deemed to fulfill this requirement.

(f) Secondary containment or diversion systems shall be maintained in good repair, free of cracks through which hazardous substances could be discharged.

7:1E-2.12 Employee training

(a) Owners or operators of major facilities shall implement an appropriate program for training their employees involved in the handling of hazardous substances and shall maintain a written description of the program.

(b) The training program shall include, at the minimum, the following;

1. A written job description which includes the duties and responsibilities relating to hazardous substances for each position, and the education, experience and training necessary to qualify for the position;

2. Procedures to determine whether an employee has demonstrated the ability to carry out the duties and responsibilities of a specific position; and

3. Specified time periods of in-house training for each position covering orientation, specific hazardous substances training and on-the-job training, trainee evaluation, final qualification, and periodic refresher training. A procedure shall be established for tracking the progress of each employee at regular intervals and shall be included in the written description required by (a) above. In addition, the maximum period of time of each training program shall be established within which the employee must achieve qualified status.

(c) The training which all employees involved in the handling of hazardous substances will receive shall include:

1. General orientation and initial training of new employees before assignment to hazardous substance operations, which shall include instruction on the general site rules and practices, and safety procedures;

2. Classroom training for new or newly assigned employees involved with hazardous substances;

3. On-the-job training for newly assigned employees; and

4. Refresher training at least once a year which shall present an overview and updated information.

(d) Employees with duties and responsibilities including emergency response, chemical operations or hazardous substance processing, shall receive additional training in the following areas:

1. Safety, equipment and procedures used in the cleanup and removal of a specific hazardous substance;

2. Standard operating procedures, including a detailed review of the hazardous substance material safety data sheets, the safe handling practices for the hazardous substance, the hazards of the operation involving the hazardous substance, and the application of standard operating procedures to actual conditions;

3. Emergency procedures regarding fires, leaks and discharges;

4. Equipment familiarization;

5. Operating data collection and entry;

6. Equipment startup and shutdown; and

7. Control and adjustment of operating conditions.

(e) The training program shall specify the qualification required for the personnel responsible for training employees working with hazardous substances.

(f) Documentation of all training, evaluation and qualifying activities for each employee shall be kept at the facility and shall include identification of all personnel trained, their job titles, subjects covered and training dates.

(g) Owners or operators shall have procedures to insure that all employees utilized by outside contractors have received site-specific information covering emergency and safety procedures.

7:1E-2.13 Security

(a) Major facilities shall be adequately illuminated so that personnel on the premises can detect intruders, leaks or discharges during hours of darkness.

(b) Major facilities shall have security sufficient to prevent unauthorized persons from gaining access to hazardous substances. This security may consist, for example, of:

1. Fencing adequate to prevent unauthorized entry (full fencing on land) of all portions or areas within which hazardous substances are stored, processed, transferred or used, with entrance gates locked and/or guarded when the facility is unattended, and either locked, guarded or under observation by personnel at all other times; or

2. For aboveground storage tanks, all of the following:

i. Valves which will permit escape of a tank's or other container's contents

to the surface securely locked in the closed position when not in use;

ii. Starter controls on all pumps locked in the "off" position when the pumps are not in use unless the controls are located at a site accessibly only to authorized personnel, which site is itself attended or locked; and

iii. The open ends of all pipes securely capped or blank-flanged when not in use for an extended time.

7:1E-2.14 Standard operating procedures

(a) The owner or operator shall have written standard operating procedures for all operations involving hazardous substances. They shall be in English in a manner understandable by employees of the major facility and shall also be written in the language of fluency of employees utilizing those SOPs not fluent in English.

(b) A copy of the standard operating procedures shall be readily available to employees.

(c) A copy of material safety data sheets or fact sheets for each hazardous substance used or stored at the facility shall be readily available to employees.

(d) The standard operating procedures shall include, at a minimum, the following:

1. A process description;

2. Procedures and conditions for normal operation;

3. A description of leak or discharge conditions which could occur, including the control and mitigation procedures to be followed to reduce the impact of the leak or discharge conditions;

4. A description of the type, location and purpose of containment systems and devices, leak monitoring equipment and alarms; and

5. Procedures for visual inspection of equipment.

(e) In addition to the items in (d) above, the standard operating procedures shall include, as appropriate for the operation being described, the following:

1. Simplified process flow sheets, showing flows, temperatures and pressures;

2. A description of the most frequent abnormal conditions, including the control and mitigating procedures to be followed to return to normal conditions;

3. Pre-startup procedures;

4. Startup procedures including conditions to be maintained during startup;

5. Shutdown procedures including provisions for normal and emergency shutdown and details on the condition of equipment to be maintained after shutdown;

6. Procedures to prepare equipment for maintenance and inspection of maintenance work upon completion and prior to placement of equipment in service; and

7. Log sheets and checklists where appropriate to the operation.

(f) A generic SOP may be written when more than one piece of equipment designed to perform the same function is located at the facility. Such a generic SOP must cover all hazardous substances utilized with all the equipment and must delineate any special conditions associated with a specific piece of equipment or hazardous substance.

(g) Modifications to the standard operating procedures shall be incorporated into the standard operating procedures prior to their implementation.

(h) A current index of the standard operating procedures with corresponding latest dates of issue shall be maintained and readily available.

7:1E-2.15 Recordkeeping

(a) The owner or operator of a major facility shall maintain records of employee training and drills for discharge prevention, and hazardous substance inventories for a period of three years.

(b) The owner or operator of a major facility shall maintain records of confirmation reports on discharges pursuant to N.J.A.C. 7:1E-5.8(c), inspection, major maintenance, and major repair of all structures other than aboveground storage tanks, equipment, and detection or monitoring, prevention or safety devices related to discharge prevention and response for 10 years or the lifetime of the structure, equipment or device, whichever is shorter.

(c) For aboveground storage tanks, the owner or operator of a major facility shall maintain records of integrity testing, inspection, major maintenance, and major repair for the lifetime of the tank.

(d) All records shall be available for inspection upon the request of the Department or appropriate local agencies.

(e) Records may be retained on microfilm or microfiche or may be kept in an electronic or computerized form if they are adequately backed up.